Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Expanding Flexible Use of the 3.7 to 4.2 GHz Band	))	GN Docket No. 18-122

Reply Comments of Siemens Corporation

Siemens Corporation herein replies to the comments that were filed in response to the Commission's Notice of Proposed Rulemaking (NPRM) to pursue the joint goals of making 3.7–4.2 GHz band spectrum available for new wireless uses while balancing desired speed to the market, efficiency of use, and effectively accommodating incumbent Fixed Satellite Service (FSS) and Fixed Service (FS) operations in the band. Siemens supports the efforts of the Commission to expand flexible use of the 3.7 to 4.2 GHz Band to facilitate the development and deployment of 5G technology but encourages it to consider the impact this may have on existing services dependent on these frequency bands.

Siemens Corporation is a U.S. subsidiary of Siemens AG, a global powerhouse focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of systems for power generation and transmission as well as medical diagnosis. In infrastructure and industry solutions the company plays a pioneering role. With approximately 372,000

employees in 190 countries, Siemens reported worldwide revenue of $92.0 billion in fiscal 2017. Siemens in the U.S. reported revenue of $23.3 billion, including $5.0 billion in exports.

Siemens has been in the United States for more than 160 years and employs approximately 50,000 people at more than 60 manufacturing sites throughout all 50 states and Puerto Rico. The U.S. is now the company's largest market. In the past 15 years, Siemens has invested approximately $40 billion in America, successfully strengthening our U.S. presence while creating an even larger economic ripple effect. Today, more than 800,000 U.S. jobs are linked to Siemens' global business operations. The U.S. is also one of our most important research centers where we invest more than $1 billion in R&D annually.

Siemens is a global leader of Industry 4.0, or the Fourth Industrial Revolution, which is transforming all industries. People, machinery and systems are now all linked digitally. This is providing our customers with greater efficiency, quality, performance and opportunities for their businesses. One of the most critical enablers of this digital transformation for Siemens, our customers, their employees and their customers is digitally connected products and processes and the wireless networks on which they run.

Siemens and our customers are highly dependent on secure and reliable wireless communication networks throughout the entire lifecycle of our products. These networks must ensure a constant flow of critical data, accessible company-wide to the relevant users, around the clock and in real time. This combination creates the conditions for significantly faster, more flexible and more efficient production processes from design and simulation to optimization and implementation as well as the potential to reduce energy and material consumption.

These productivity and economic gains that Industry 4.0 will deliver via the digital transformation will be powered by the next generation of communications technology known as 5G. For this technology and the billions of devices expected to leverage it to be developed and effectively deployed across the world there must be an adequate amount of spectrum available. This is why Siemens supports the Commission's efforts to expand flexible use of the 3.7 to 4.2 GHz Band to facilitate the growth of 5G technology. This point was illustrated well by one commenter who said "the success of "Industry 4.0" is dependent on availability of 5G technology and adequate mid-band spectrum therefor. Fundamental to the "fourth industrial revolution" is the implementation of a reliable communication layer capable of dealing with an increase of several orders of magnitude the number of assets, volume, variety of information and reaction times in future manufacturing systems." [1]

Enterprises in the U.S. that are fully embracing Industry 4.0 see this future economic growth opportunity not only in the U.S. but in markets around the world. However, this opportunity will not be realized without globally harmonized standards and spectrum allocations. Siemens therefore encourages the Commission to coordinate its efforts with its international counterparts who are currently considering specific bands that will provide the most reliable connectivity for use in the industrial and manufacturing sectors.

The development and deployment of 5G technologies will enable companies in the industrial sector and their customers to make the digital transformation. Siemens looks forward to the working with the Commission as it pursues its strategy *entitled Facilitate America's Superiority in 5G Technology* (the 5G FAST plan) and encourages it to move forward to expand

[1] Comments of Robert Bosch LLC and Supporting Parties in the matter of "Expanding Flexible Use of the 3.7 to 4.2 GHz Band, GN Docket No. 18-122; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, GN Docket No. 17-183; 29 October 2018

flexible use of the 3.7 to 4.2 GHz Band to facilitate the development and deployment of 5G technologies.

Respectfully Submitted,

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